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SCHOOL AND SOCIETY

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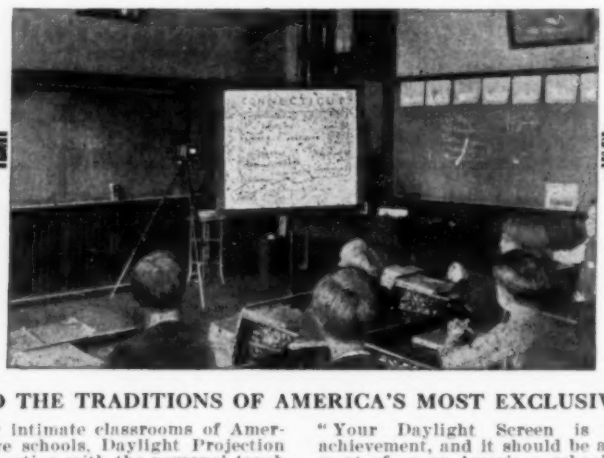

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SCHOOL AND SOCIETY

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THE FACTOR CONCEPT IN EDUCATION[1]

The members of this section, to some degree at least, profess to believe in a science of education. I presume every one of us subscribes to the fundamental assumption of all science, "that under identical conditions, identical causes lead to identical results," even though we do so with crossed fingers, knowing full well that conditions never are identical from one situation to another; that the time factor at least can never be twice alike. We justify ourselves with the qualifying remark, "identical for all practical purposes" and pass on in our search for cause and effect.

Nevertheless, some of the educationalists soon begin to part company from other scientists. For in the physical sciences there are many who hold that the reign of law is absolute; that man's control of nature may be extended without limit just as fast as adequate data are secured and proper generalizations made. Among us, however, are those who say very frankly: "The realm of mind and spirit differs from the material. It is quite impossible to apply the methods and technique of the physical sciences to education in anything more than a superficial way. Measurement has proved possible, it is true, but measurement of material aspects of the educational product only. The vital elements of the educational process defy measurement. They are too complex, too far out of reach. Man can never hope to develop a reasoned control of education which will be at all comparable with his control of matter and energy."

[1] Read at the meeting of Section Q, Education, of the American Association for the Advancement of Science, in Cincinnati, 1923.

The faith of those of us who do not agree with this point of view is not only that reasoned control is as possible in education as in any other field of human activity, but also that it is to be achieved in exactly the same manner as in the other sciences; that is, through the experimental determination of natural laws.

The backbone of every recognized science is the factor concept. A natural law is a statement of the relation between factors and effects. It expresses in mathematical terms the influence of each factor in producing some complex result. These relations are determined in every case by experimentation which observes the law of the single variable. That is, in a complex situation, all the factors but one are kept constant, and the changes produced by variation in the one factor are measured. The generalized statement of these results is a law. Knowledge of law is easily transmuted into control, within the limits of the law. The method of inductive science is, therefore, essentially analytical, and progress is made whenever in a complex experience an apparent factor is isolated and proved to be a real factor by determining its functional relation to the general result.

The analytical triangle for the physical world is made up of matter, energy and conditions. That is, whenever an experiment is tried, the physicist analyzes the situation into the major factors, matter and energy, and a large number of minor manifestations of matter and energy which he regards as unimportant because their effects are negligible for all practical purposes. Thus, falling bodies gain in velocity at a rate which does not seem to depend upon whether the measurement is made in a brick house or in a frame one. That there is something which falls, and

that its fall is most easily and precisely described in terms of a common cause of motion, namely, energy, appear to be the essential elements of the situation from the point of view of control.

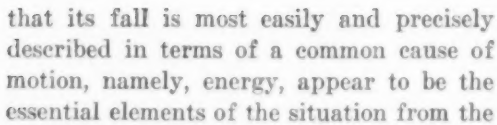

FIG. 1

The concept of matter arises in a crude form very early in the experience of both the individual and the race. Observation of the development of consciousness in babies yields helpful information. The first stage of consciousness is, in terms of the famous description by James, "one big, booming, buzzing confusion." It has been well said, "The first time a child sees the light, *he is it* rather than *sees it*, but, as experiences multiply, the general sensory confusion becomes resolved into parts and in time he comes to perceive objects as space-occupying, moving things, external to himself." For a long period of time, movements of objects take place under conditions which are mysterious and inexplicable, but gradually the concept of cause and effect makes its appearance and as a result order emerges from chaos.

In considering this process it is important to note that factor concept arises by a selective process. Man tends to remember the constant elements of experience and to strip off and throw away as unimportant the inconstant features. A factor is, for this reason, always an abstraction. Thus, matter and energy, the philosopher points out, are mere creations of mind: they are but two phases of one thing. Even the scientists recognize that no matter exists apart from energy, and no energy is ever seen apart from matter. Indeed, the philosophers in their persistent search for reality point out that there is no proof of the existence of either matter or energy apart from the consciousness which knows them. In other words, the universe is a single whole and the factor concept, which enables man to resolve it into parts, is a mere convention. Reality is always larger, more inclusive than the concepts by means of which it is apprehended. For practical purposes, however, the concepts of matter and energy have great value. Indeed, they have *so great natural value* that it is only the poet, the philosopher or the spiritual leader who, unaided, intuitively senses their underlying unity.

Generalizing from the foregoing, the program for the development of a science would appear to be—

(1) Selection and definition, as objectively as possible, of single, pure, recurrent aspects of situations.

(2) Construction of units in terms of the definitions adopted.

(3) Analysis of complex situations in terms of the factors defined, observing the law of the single variable.

A corollary from the last item of the program would appear to be, "Compare only items which are truly comparable." That is, do not regard as equivalent equal numerical measures which are resultants of combinations of different factors.

To bring this general discussion down to a practical basis, let us consider specific data. In the physical fields, the scientists have reduced the fundamental aspects to three basic concepts—space, mass and time. These are, of course, not three separate entities, but three very different aspects or ways of analyzing experience. It is impossible for us to think of mass which does not

occupy space for a sensible duration of time. A moving body is a unitary whole which has the three aspects, mass, space and time. So far no data are at hand which warrant the definition of other fundamental aspects of experience, although certain of the phenomena of life and consciousness continually suggest that ultimately man may have to provide for the analysis of experience from a fourth point of view. As James says, "The universe of all of us is still to a great extent a confusion, potentially resolvable and demanding to be resolved, but not yet actually resolved, into parts." How many parts there will be when the resolution has been pushed to the limit, no man can say. For the present it is enough to note that the road to progress lies in the direction of analysis and definition, and that, so far, three fundamental concepts, and units based upon them, have served to give control in every field in which man has achieved control through exact measurement.

There are, of course, many secondary concepts, definitions and elements. Energy is such a concept, but the energy of a moving body may be expressed in terms of mass and velocity, while velocity itself is a function of space and time. The complex, gravitational force, has been similarly shown to be a function of mass and space. Time was omitted from the formula learned when I went to school, but more recently Einstein and others have been saying a great deal about time and gravitation.

Units	*Laws*
Centimeter	Phenomenon $= f(l), f(m), f(t)$
Gram	Energy $= \frac{1}{2} m v^2$
Second	Gravitation $= G \frac{m m^1}{d^2}$

$$V_{tp} = V_t{}^1{}_{p}{}^1 \cdot \frac{273}{273 + t^1} \cdot \frac{p^1 - a}{760}$$

FIG. 2

However, the type of situation which I am most interested in bringing to your attention is that represented by the formula for the correction of volume of gases to standard conditions. When a metal is combined with an acid, hydrogen is set free. The volume of the hydrogen is evidently related to the amount of metal used. When, however, determination of exact relationship was first attempted, conflicting data were secured. The correlation between the mass of metal used and the volume of the gas produced was not perfect. This situation is analogous to that which prevails in education to-day. We have developed the concept of capacity. Capacity, according to our definition, ought to correlate perfectly with achievement. It does not; in fact, the correlations are troublesomely low. Let us see, therefore, what the physicists did in the solution of their problems. Perhaps a similar procedure may help us to solve ours.

The solution in the case of volume of gases is known to all of you. The physicists studied the situation until they discovered other factors which also affected volume, namely temperature, pressure and vapor tension. They then carefully determined experimentally, by conforming to the law of the single variable, the effect of each of these factors. To-day these laws are combined into a single correlation formula used in every high school chemistry class in the land to strip the complex situation of extraneous elements so that the relation between mass of metal and volume of gas set free may be clearly seen. For more exact work, however, this simple formula will not do. Further refinements are necessary, and each new discovery, each new correction formula, raises the correlation coefficient for the metal-volume relationship. We believe, therefore, that if correction could be made for the effect of *every other* factor, so that the mass of the metal used were the only factor affecting volume, the two would be perfectly correlated.

The analytical triangle for educational measurement may be taken as composed of three elements, tests, conditions and subjects, with the observer in an uncertain background as in physical measurements. The tests we make we can control. The conditions of timing, temperature, pressure, lighting, etc., we can control or allow for. The element beyond our control, the unanalyzed complex we seek to resolve into factors, is the subject.

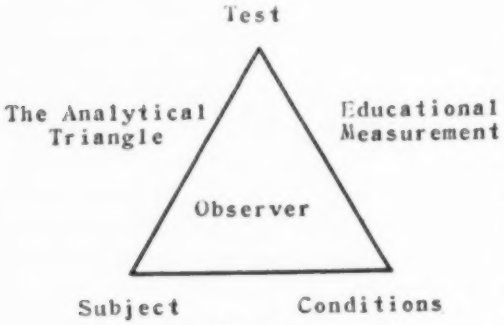

Fig. 3

However, even here we have made some progress. The analytical triangle for the subject himself is also composed of three major factors, heredity, maturity and training. The complex product of these three is ability. It is ability functioning in specific situations that leads to performance, and it is always performance we measure.

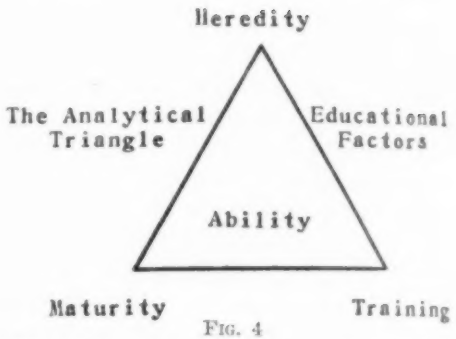

Fig. 4

The following diagram seems to me to make the situation very plain. Let capacity be defined as potential ability, the power to profit by experience. It is fixed by the biological processes of heredity. It is developed by experience. These experiences may be of two sorts: (1) undirected (natural) experiences, like eating, play, riding on street cars, seeing traffic officers and the like, which take place inevitably, and whose effects are summarizable in the general term growth, development or maturity, and (2) directed experiences (or trainings) which are given specifically for the purpose of controlling development.

The product of maturity and training acting on capacity is ability or general power to do. This, a twelve-year-old child in the 6th grade of the conventional American school will have a certain ability to write. To measure this ability, we ask the

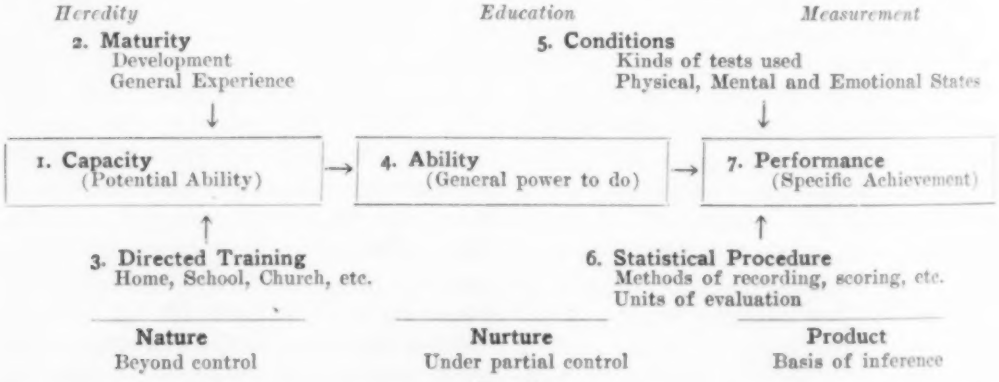

Fig. 5

Diagram of the relation between the seven major types of factors contributing to conclusions in educational measurement.

child to write under specific conditions, as, for instance, to write as rapidly as possible "Mary had a little lamb" over and over again for three minutes. The resulting performance we call a measure of the child's ability. It is really nothing of the sort. If we ask the child to copy Lincoln's Gettysburg speech as carefully as possible to show how well he can write, we obtain a performance which differs markedly from the first in both rate and quality, but which is *just as much* an expression of the ability of the child in writing as was the first. The proof of this is easily given. If the child is again asked to write "Mary had a little lamb" as rapidly as possible, he may reproduce exactly his first performance.

Performance is thus a function of ability acting under certain conditions. If we hold the conditions constant, for two children, performance will be proportional to ability. Accordingly, we ordinarily use performance scores as measures of ability. However, if one child has been allowed two minutes in which to take a rate test and the other three, no mere *assumption* of equal conditions changes the fact that conditions are not equal, and that two *equal* performances under *unequal* conditions indicate *inequality*, not equality, of ability. Similarly, we make many errors in inferring equal capacity from equal ability when the maturity and training factors are not equal. Not until we become more analytical, not until we define our concepts more precisely and correct scores for the effects of every factor save one, can we hope to trace relationships definitely enough to discover fundamental laws.

In Detroit we have had continuous measurement of children under uniform conditions for many years. It is possible, therefore, to study the development of children through several consecutive grades; a substantial grant from the Commonwealth Fund through the School of Education of the University of Michigan has made such study possible. Here, for instance, are the continuous records in handwriting of two children from the second grade through the eighth.

It is evident at once that we are dealing with a complex situation in which many factors are having an effect. Let us attempt to analyze the situation into factors and see where the idea of correction formulae will lead us.

As a first step, let us take a single mature

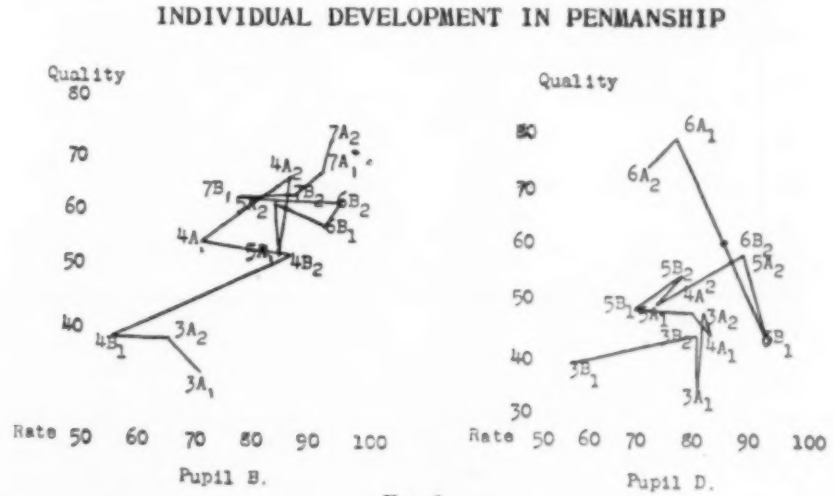

FIG. 6

Development curves of two individuals tested twice a semester from the third grade through the sixth and seventh grades under uniform conditions.

individual and subject him to a series of eight tests at one time under a variety of conditions. After 25 years of training it is probable that the tests themselves will produce but little change in his ability; consequently, change in score means not change in ability, but change in a complex of which ability is but one factor. That is, let us assume that ability is constant during the eight tests. That this assumption is valid is proved by the fact that this same individual measured after a lapse of 18 months under the conditions of test 4 made a score of 90 in rate and 65 in quality, scores which are half-way between those for tests 4 and 5 shown in the figure.

The results of the eight tests prove that the scores of one individual may vary through a very wide range of rate and quality; or, in other words, that under the proper stimulus, ability may express itself in a variety of ways. Calling a test a "speed" test and putting the emphasis on rapidity of writing tends to produce high rate and low quality scores; on the other hand asking for a sample of the subject's best writing stimulates him to write slowly and with high quality. In the figure the curve shows the general relationship between rate and quality for one individual, and the meaning of the wide range of variation is best grasped by comparing it with the curve based upon Ayres standards for handwriting from the fourth to the eighth grade.

Effort and special conditions are other factors influencing handwriting. If the subject writes on a piece of paper held in

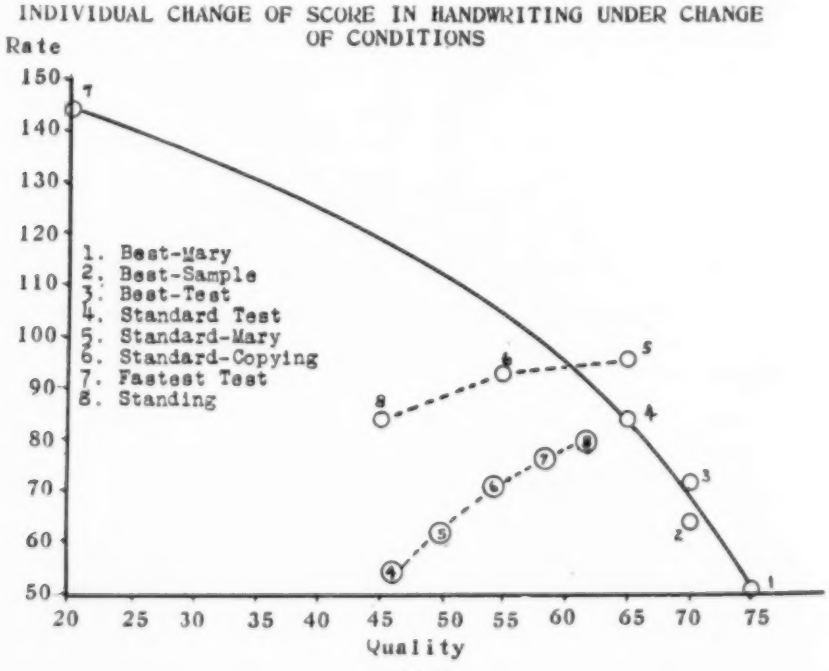

FIG. 7

Eight tests of one individual during one hour but under varying conditions. Actual order of tests 2, 4, 5, 6, 3, 1, 7, 8. In test 2, the subject was asked for a sample of his best writing; in test 4, to write a standardized paragraph rapidly and well; in test 5 to write, Mary had a little lamb, rapidly and well, in test 6 to copy the first paragraph of Lincoln's Gettysburg speech rapidly and well; in test 3 to write the standardized paragraph as well as he possibly could disregarding rate; in test 1 to write, Mary had a little lamb, as well as he possibly could disregarding rate; in test 7 to write the standardized paragraph as rapidly as possible disregarding quality; in test 8 to write, standing, holding paper in his hand. Dotted line 4–8 based on Ayres' standard scores.

his hand while standing, the handicap of the special conditions degrades his writing to the scores obtained in Test 8, while writing a single sentence over and over again under standard conditions leads to the scores obtained in Test 5. If, therefore, only three tests of the individual were made, Numbers 5, 6 and 8, the curve of variation would appear to be that of the dotted line, a curve closely resembling the curve of standard scores but on a higher rate level.

It should be plain from such results that performance scores are not measures of ability, but merely of specific achievement under given conditions. The explanation of the individual curves of progress is now clear. In spite of the fact that each is the result of uniform tests of a single individual, variations in score are caused by change in the factors of maturity, training, effort and a varying emphasis upon rate in the child's methods of work. A major task before measurement men is that of eliminating the effects of all these factors except training in order to measure the effect of training alone.

That this is a difficult problem goes without saying. That it is a problem which must be solved before there can be any true science of education is easy to prove. Very many of the conclusions which have been and are daily being drawn, from massed heterogeneous data might be reversed were analytical methods employed and allowance made for the effect of factors other than those being considered.

For instance, sex has long been known to be a factor in many educational results. Boys do not mature as rapidly as girls and have certain psychological traits which make them respond to training and tests in a different manner. This means that a score in handwriting of, let us say, 75 letters and quality 55 for a girl thirteen years old, which indicates an objective achieve-

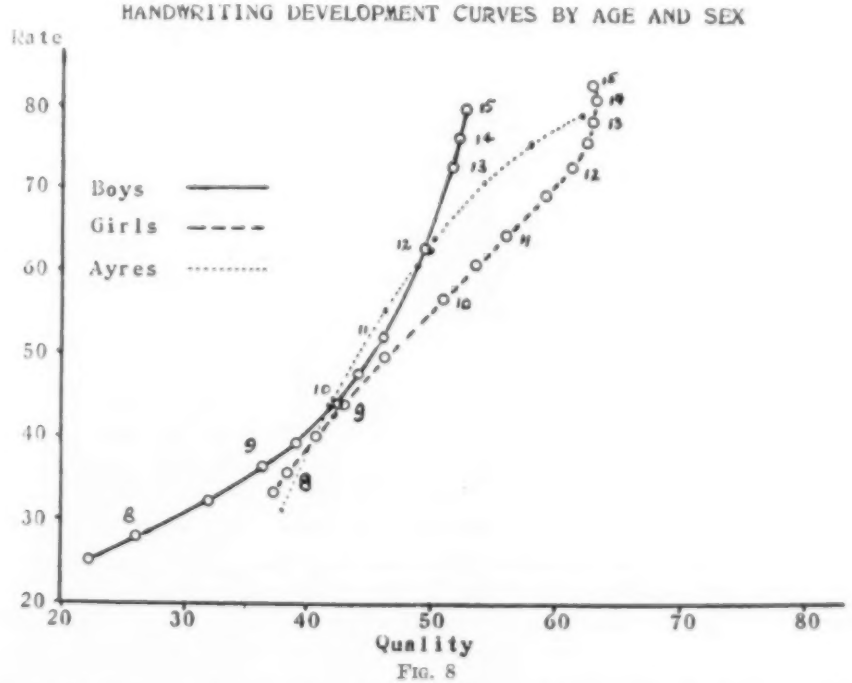

FIG. 8

Age groups by half years. Curve of Ayres' standard scores shows average development of American children by *grades* from second through eighth.

ment equal to a score of 75 letters, quality 55, for a boy of the same age, does not mean the same thing that the boy's score does. For accuracy of interpretation each must be referred to its own norm. The boy's writing is better than the average for his age, the girl's worse.

In the figure note that while the curve for Ayres standard scores by grades is convex, the curves for boys and for girls by ages are concave. This probably means that from the grade point of view the children who learn most rapidly learn to write well first, while from the age point of view the first steps in learning to write are the most difficult. The girls write faster and better than the boys at every age, and the forms of the two curves differ greatly.

Another illustration of the need for the analytical treatment of results is shown by the attempts that have been made by Starch and others in handwriting, by Brown and others in reading, and by many other investigators to reduce a two-dimension score, like rate-quality, speed-accuracy, etc., to a single score. Almost all such attempts have been based upon the development curve by grades, while as a matter of fact, as has already been shown, the curve of adjustment crosses the development curve at about right angles. The adjustment problem, however, is much more complex than the correction schemes of most investigators would indicate.

For instance, if a group of children of the same age are given a standard hand-

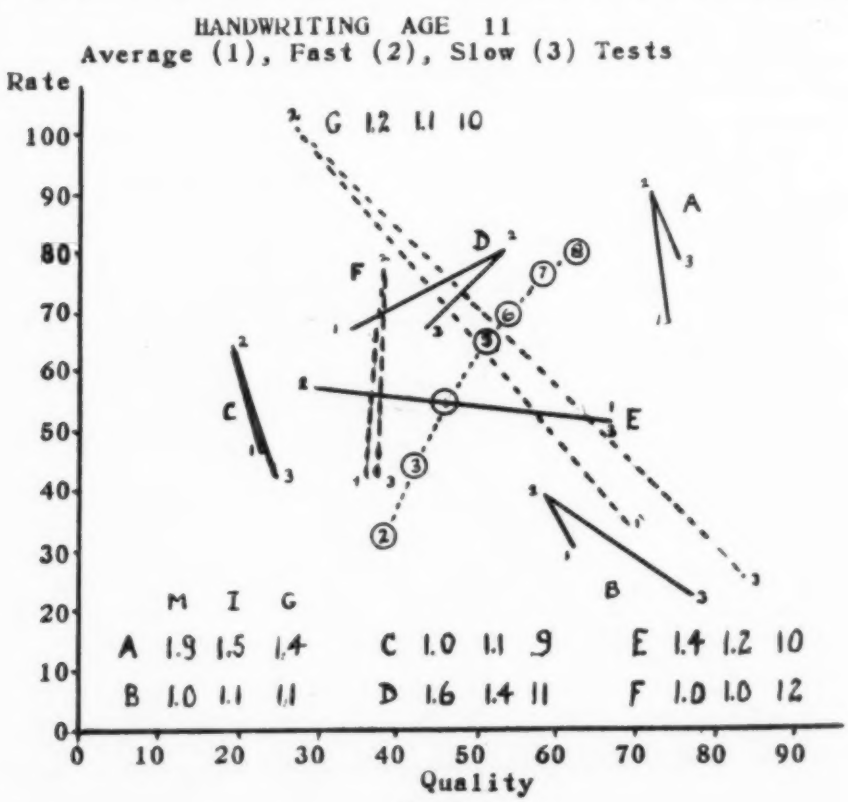

FIG. 9

Graphs of scores of seven individual children, all eleven years old, in three tests in handwriting, (1) a free choice test, (2) a speed test, emphasis on rate, and (3) a quality test, emphasis on "best writing." M = motor ability as measured by other tests; I = intelligence score; G = half grades of training. F is taken as standard. Thus A has nearly twice the motor ability of F, once and a half the intelligence, and 14 semesters of training. Dotted line 2–8 is based on Ayres' standard scores.

writing test under conditions which for most children call out their average writing (Test 1), their fastest writing (2) and their best quality of writing (Test 3), the individual curves are of the type shown in the figure.

The children differ both in the slant of the adjustment curves and in the amount of adjustment made. In general, the curves of those who write either well or poorly tend to be vertical curves and of limited range (Curves A and F), while the curves of average writers (quality 50 Ayres) tend to approximate 45° in slant and show large variations. There are many individual peculiarities. Curve E is almost horizontal and almost at right angles to Curve F. Curve D is another type of variant. This individual, asked to write rapidly, does so, but puts so much effort ("pep") into his writing that the result is higher in both quality and rate than when he tries to write slowly and well. Nor are these isolated peculiar cases. Although, of course, extreme forms occur less frequently than the conventional type represented by Curve G, they have been found in sufficient numbers in similar experiments in measuring adding and composition ability as well as handwriting to prove they are a persistent phenomenon in need of explanation.

How great is the need for explanation may be comprehended by noting that in this one age group, the curves shown completely surround the curve of Ayres standard scores representing the average development of handwriting ability from grades two to eight. The problem is to correct the scores of the various individuals for uncontrollable factors and reduce them to some common basis for comparison in terms of controllable factors, as, for instance, training.

Let us consider the effect of capacity as measured by general intelligence tests. Calling the capacity of the individual making the lowest score one, and assuming that capacity is directly proportional to scores in an intelligence test, individuals A, D, E have 1.5, 1.4, 1.2 times the capacity of F, respectively, while the remaining individuals have but one tenth greater capacity. Capacity is thus a factor in determining ability but not the only factor. Before we could determine its effect, some correction would have to be made for variations in amount of training; for, although all these children are the same age, A has had the opportunities offered by the training in 14 different half-grades while C's opportunities have been restricted to 9 half-grades. What allowance should be made for this difference? I do not know. Until I do, however, I shall be unable to determine the precise part played by intelligence in the development of ability in handwriting.

If, instead of general intelligence, we direct our attention to more specific capacities, the situation is a little easier to understand. For instance, individuals differ in their rate of motor activity. All the motor responses of some children are made at a relatively high rate of speed. A is such a child. B is a slow-moving individual. The average scores of A and B in two tests of rate of motor activity were as 1.9 to 1. In other words, A makes controlled movements with his hands nearly twice as rapidly as B. The quality of their writings is approximately the same. Allowing for B's slow rate of motor response, the instruction of A and B in handwriting must be judged to be equally successful, in spite of the fact that A has passed through fourteen half-grades, while B was passing through eleven half-grades, and in spite of the further fact that the intelligence scores of the two children are in the ratio of 1.5 : 1.1. If now I say that A is a girl and B a boy, I introduce another element to complicate the situation. The conclusion I draw from all this complexity is that our technique of determining I. Q.'s and A. Q.'s and E. Q.'s and our

entire notion of norms and standards is in need of thorough revision. I believe in correction formulae which will enable us to set standards for each individual in terms of the particular factors operating in his case.

General standards are necessary as bases of interpretation, but individual standards are equally essential for teaching.

My whole message this afternoon is a plea for the stricter observance of the law of the single variable; that scores are not comparable merely because they have the same numerical value. My final illustration will be taken from a familiar field, the relation between capacity and school marks.

When intelligence tests were first developed, their more enthusiastic advocates talked as if success in school were predetermined by capacity. However, correlations between scores in intelligence tests and school marks proved disappointing. For the conventional class and teacher, values of r range from .25 to .55, averaging, say, .40. At once the opponents of mental tests jumped to the opposite extreme conclusion; that mental tests are of no value in predicting success in school. Now even if we grant that mental tests yield valid measures of capacity, which they do not, there is still the question of the variables represented in school marks to be considered before conclusions are possible.

Consider, for instance, Figure 10, which gives the frequency with which a given total of academic marks was earned by a group of 43 boys, aged 10. Let us assume for the moment that the various teachers mark by the standards for their grades (which we know is not true), and that they all mark with 100 per cent. efficiency (which also is not true). Then in grade 4, a mark of 5 would mean greater success than a mark of 10, 10 more than 15, and so on. But what shall we say about a mark of 10 in the sixth grade as compared with a mark of 10 in the second grade, particularly when these marks are earned by boys of the same chronological age?

If in Figure 10, we assume the fourth grade as the standard level to which these marks are to be corrected, we can say roughly that a mark of 10 received in the sixth grade by a ten-year-old boy is equivalent to a mark of zero in the fourth grade, while a mark of 10 given a ten-year-old boy in the second grade is equivalent to a mark of 20 in the fourth grade.

The figure illustrates very prettily, it seems to me, that a child over-age for his

GRADE AND SCHOOL MARKS

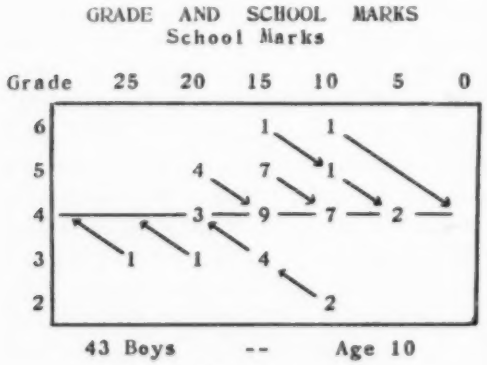

Fig. 10

The table is to be read as follows: of 43 boys, age 10, 2 in the fourth grade received a total (academic school marks at end of semester, five subjects, 1 highest mark) of from 5 to 9, seven a total of 10 to 14, and so on. The arrows indicate the lines of adjustment if all the marks in different grades were to be changed into equivalent marks at the fourth grade (approximate only).

Intelligence and School Marks

	Low			School Marks					High
Grades	18	17	16	15	14	13	12	11	10
7A	136			143	144	144	134 150	154	
	121			121	136	130	115 140	134	
7B	90	102			130	103 135 88 118		147 139	149
6A	93		95						
6B	88				98			118	
5A									
5B	68		70						

32 Girls—Age 12½

Fig. 11

The relation between grade, school marks and intelligence scores among 32 girls, each 12.5 years old. For a given mark as 18, intelligence increases with grade; for a given grade, as 7B, intelligence increases as marks improve.

grade and repeating the work of his grade will be marked relatively high by the teacher, while the child under-age for his grade and attempting advanced work for the first time will be marked relatively low. In other words, teachers' marks are influenced by many factors and before the relation between intelligence and marks can be established, correction of marks for the various factors must be made.

Figure 11 presents school marks in relation to the intelligence scores made by a group of 32 girls who were 12½ years old and who were in several different grades. If we consider the mark 18, it is evident that it requires a higher and higher degree of intelligence to receive this mark as we move from lower grade to higher. On the other hand, if we confine our attention to any one grade, as the 7B, the better the mark the greater the intelligence required to earn it.

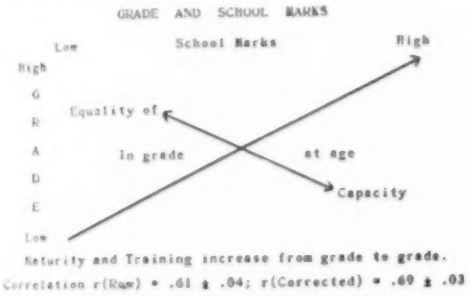

FIG. 12

The relation between the various factors involved is indicated in Figure 12. The long arrow represents the general relationship between grade, intelligence and school mark. The line crossing it at an angle represents the line of displacement along which will be found individuals of equal capacity. This line indicates roughly the general effect of the correction that must be made for difference in grade level, when attempting to determine the relation between school marks and intelligence. This line, however, is not a line of single correction but the resultant of two factors. One correction must be made for the maturity factor and another for the training factor. The exact form of the correction formula is at present undetermined, but it is interesting to note that the value of r for the relation between school marks and intelligence scores rises from .40 for any one mixed class, in which age, sex and other factors are operative, to .61 for a homogeneous age, sex group, and to .69 if a crude empirical correction of mark for grade is made. Such changes in correlation coefficients lead to the faith that if allowance could be made for all other factors, success in school would be perfectly correlated with capacity. They prove that intelligence is one factor conditioning school marks. This conclusion does not mean that intelligence is the only factor which determines success in school. In fact, it proves the converse statement to be true; that intelligence is but one of the factors operating. To-day we know that we must consider the effects of many physical, emotional and social factors as well as the effect of maturity, training and special conditions before we can safely predict a child's success in school. It is the factor concept, however, which seems destined to prove of most service in helping us solve our problems. He who adopts the factor concept as his guide will analyze, rather than mass, data, will direct his efforts to the development of appropriate educational laws and correction formulae, and will observe the law of the single variable much more conscientiously than it has been observed in the past.

S. A. COURTIS
DIRECTOR OF INSTRUCTION,
DETROIT PUBLIC SCHOOLS

WHO CAN SUCCEED IN COLLEGE?

THERE wasn't much to say. He was one of twenty whose semester's work the board of deans had decided was too poor to warrant their staying in college. As I handed him the transcript of his record I ventured: "I'm sorry *you* have to go."

"So am I, but it's no use now. I loaded up with too much in September. Kept trying, but couldn't carry it."

I knew he was telling the truth. That's what hurt me. Doubtless I've become as mechanical as others. Seeing a hundred students in a day on a score of topics, one is likely to lose much of the personal element, but every now and then —and this is what keeps me hopeful—I do have a human feeling. I felt really hurt that *George* was having to leave college. He had lived in the same block, had tended my furnace during my last trip, my youngsters liked him. Nor dean nor professor had a bad word about him. All agreed he had tried; all agreed he had ability. But, technically, he had not passed enough credit hours to remain in college, so he was leaving.

I said to a member of the faculty that afternoon: "I'd like to start a college with a hundred such boys as George." He replied that he would, too!

It was too late to do George any good, but I looked further into his record and schedule of studies. In every technical detail his schedule was O. K. It included the subjects prescribed for his class, it was free from conflicts, it did not exceed the maximum hours allowed, it was pretty evenly distributed throughout the week. It was easy to see that any one of us examining his card at registration would quickly approve it and pass on to the next student.

This incident occurred some years ago. George's serious purpose was evidenced by his going straightway to another college where he secured admission on probation. His ability is attested by his successful continuance in that college. He has made an average scholarship record, has taken his place in campus and field activities, and generally has proved a desirable citizen of the college community.

A man of big success in business said to me recently: "You college men have no right to continue this wholesale dropping of students. You accept them in September fresh from the exhilaration of their high-school graduation. They have left their commencement exercises with high aspirations to amount to something in the world; the most ambitious of them come to you. You mass them at registration, you teach them in crowded classes. After four months of this you send hundreds of them home —disgraced. You brand them as failures. You tell them they haven't made good. They have made good for a dozen years of schooling. That doesn't count; their failure to adjust themselves in four months in college outweighs all their previous successes."

"Some colleges give a full year's trial to all students who are admitted," I said.

"Yes, but some of you turn them out after only a few weeks. A student in whose heart you have not succeeded in extinguishing the flame of ambition goes to another college and wins. Many, rebuffed by your exclusion act but accepting your judgment as final, marked as failures, down-heartedly seek some other occupation. At best, it is their second choice of activity. What's more, they begin their new work with a feeling of personal failure. Finally, the chances are fifty-fifty nowadays that the employment department will inquire their college record and the story it tells too often shapes the attitude of the firm toward its new men and women as 'unsuccessful in last place.'"

There was no denying the facts in his statement and his conclusions seemed warranted. In sending them forth as failures we were giving them the worst possible start upon their way. My friend was in earnest. He knew some of the young people dropped, knew that they were worth while.

"Your colleges propose to fit young men and women the better to cope with the problems of life," he continued. "I am a college man. I believe in college education. Those who finish the four years are, most of them, the better for it. But those who stay two years, or even only one year, should catch an insight on life that would prepare them for happier, more successful living than if they had never gone to college.

"If a student is not likely to have the chance of staying and benefitting by a year with you, you have no right, I repeat it, to accept him at all. It is your business to find out *in advance* whether or not he is the stuff of which successful college students are made. If in your judgment he is not, do give him a chance of entering other work at once while the enthusiasm of his high school success is still fervent."

My friend's remarks brought to mind the delightful essay Dr. Gulick wrote some years ago on "The Habit of Success." His illustration

from the practise of those who train rat terriers has been repeated in many addresses. The puppy is first allowed to toy with a dead rat, later a live one whose teeth have been drawn is given him for conquest. Finally, after numerous successes over rats partially dis-armed, the well-grown pup finds himself face to face with a vigorous full-toothed opponent. His habit of success brings him off victor.

My friend who would reform our colleges is not himself an educator. His remarks were based merely on observation of some three or four nearby colleges. He made no claim to have studied into our system, offered no statistics. Yet his words had weight with me. Why? Because he had sized-up the situation, not in terms of admission units or credit hours but of human relationships. The twenty freshmen dropped from college were no longer merely the "lowest 7 per cent. of the class" but they were twenty sons and daughters of fathers and mothers who have wished and worked for the best for those children and who thought that sending them to college was the finest thing they could do for them.

Haven't you sometimes had the feeling that you were in the wrong over a matter and been just about ready to apologize when an outsider stepped in and accused you? Every sinew stiffened, your spirit was roused in self-defense. Of course, you had done no wrong. Well, anyway it was no worse than others were doing all the time.

I had regretted our situation. I was sorry that *some* of those dropped were having to leave college. But I realized the difficulties in our problem, as my business friend did not, so I sought comfort for our ills in the ills of others. I turned to figures.

Hugh H. Caldwell, addressing the American Association of Collegiate Registrars, said: "If we take the collegiate institutions of America as a whole, admitting annually over 100,000 freshmen, the freshman mortality amounts to at least 32,000 students." He assumes that 12 per cent. are lost on account of transfers to other colleges, illness, lack of funds, etc., and 20 per cent. on account of partial or absolute failure in studies. *"On this basis we have 20,000 freshmen a year who fail so badly that they voluntarily or involuntarily withdraw."*[1]

[1] SCHOOL AND SOCIETY, May 6, 1922.

A few years ago five hundred constituted a good college enrollment; a few years ago a millionaire was a man to note. Have the swollen enrollments and the multiplication of fortunes lost for us all appreciation of the significance of figures? Twenty thousand would have manned forty colleges a decade back!

"Poor colleges these ejected freshmen would have made," says an objector.

Yes, many of them ought never to have started college; their efforts should have been turned into other directions in which they might have had a good prospect of success. College officials are coming to a fuller realization of their responsibility in this matter and of their opportunity of rendering a more helpful service to many young people by counseling them to devote themselves to other work rather than by inviting them into college.

In the concluding paragraph of an exhaustive study at the University of Wisconsin on "Why Students Leave College," Professor C. A. Smith writes: "The problem can not be solved by raising the standards in the preparatory schools alone. *Better methods of eliminating those who should not try* to do university work should be worked out."[2]

Better methods of selection we must have. The high school diploma is inadequate, the entrance examination encourages cramming, the mental alertness test does not measure ambition or stick-to-itiveness, the general information test is on acquisition not potentiality.

But each of these has proved its value in some particular and should be used to complement known deficiencies in the others.

A good high school record is generally indicative of a good record in college,[3] but the boy or girl who is under easy markers or in a high school that exempts its best pupils from examinations will find difficulty in meeting the standard in college classes. Preparation for an entrance examination in even one or two subjects will help such pupils. The writer urged such a combination of examination and certifi-

[2] *Educational Administration and Supervision*, September, 1923. Italics my own.

[3] "School and university grades," Dearborn, W. F., University of Wisconsin Bulletin, No. 368, and "High school *vs.* college grades", Brooks, Wendell S., Minnesota Teacher, November, 1921.

cate in speaking before the North Central Academic Association in Chicago last year.

The major difficulty, I believe, lies in the fact that many able faculty members have not been at all engaged in the problem; many others have devoted themselves to it for two or three days twice a year, then gone about the work of their own departments. The fact is that the college faculty in solemn meeting from time to time decides upon the terms of admission, then delegates to the registrar the function of passing on all applicants. All summer he stays on the campus and with the help of two or three stenographers admits by letter all who meet the specified requirements. In September they come, and the faculty returns en masse. They meet. After but little guidance[4] in registering and choosing courses these freshmen find themselves in college class rooms. Whereas one man the summer before had glanced over their high school credentials to see if they had strong points enough to enter, a half-dozen are now sitting over them in judgment on their daily recitations, and a score, or a hundred, at the faculty meeting will vote on general principles "to preserve the standard of the college" the lowest freshmen must be dropped.

This has been our selective process, particularly since the war. May a college faculty not do better by meeting deliberately to determine:

(1) How many freshmen can we teach effectively next year?

(2) What do we want those freshmen to know before they come?

(3) What do w ewant those freshmen to become as a result, in part at least, of having been with us?

(4) What must they be at the outset in character and mental alertness to offer a fair prospect of our reaching our ideal through them?

The first question is answered by a survey of material resources and equipment. For an adequate answer to the second, I should like (1) the high school record, (2) a hand-written letter of application answering a half-dozen personal questions, (3) a paper of 300 words, or so, on a topic of major interest to the candidate, (4) a general information test. The two latter could be written under the supervision of a teacher or pastor in the home community.

The ideals of the faculty for the incoming class will vary with the college, but I suspect that more and more our American colleges of liberal arts will develop individuality. While endeavoring to maintain strength in all standard departments, one because of its traditions will emphasize the classics, another because of its location will stress government and current affairs. An unusual gift will enable a third to develop a department of chemistry much superior to its other departments.

A college that has developed superiority in any given department might well expect of its candidates more than the usual amount of preliminary preparation in this field which it intends to emphasize, and the prospective student in turn would base his selection of college somewhat upon his own major interest.

To aid me in deciding upon the fitness of a candidate with respect to Question 4 I desire letters from three persons named by him. These would be in answer to specific questions from me. To compare with these letters (presumably from a candidate's friends) I want as many more letters from other people who have known him but whom he has not suggested my writing. The butcher and baker, the postmaster and ticket agent, are likely to know the high school boy and to throw side lights on his character, his attitude toward work, and his personal ambition, which will be invaluable guides in determining his probable success in college.

The candidate is still at home; he has incurred no expense; except for two or three hours in writing tests he has suffered no interruption to his summer's employment or vacation. Yet the college has obtained a quantity of information about him! Besides his school record (which is too often the only thing known) we have samples of his own work and a half-dozen letters covering specific points of interest to us in determining the probability of his success.

One man should not be expected to pass judgment even in the small colleges, but he should have the assistance of several members of the faculty of rich personal experience and mature judgment. A candidate whose high school record was poor, whose letter and composition

[4] "The amount of time given in counsel to entering students on the selection of their courses and subjects varies greatly, averaging 15 to 30 minutes." Kelley, F. J., of the University of Minnesota. Tentative Draft of a Report of a Limited Study of Colleges of Arts. Chapter IV.

were unsatisfactory, and about whom fellow citizens wrote in uncertain terms would of course be declined. If one's own work to date seemed poor but neighbors had reasonable expectations of his making good, he might be invited to the college for a personal interview and to take the mental alertness test. The result of these might confirm his neighbors' expectations; on the other hand they might show that he would probably do best in other than college fields.

This procedure is suggestive, not arbitrary. Several colleges have developed highly refined processes of selection. Most colleges need to know in advance more about their candidates for admission. Not until a college has surveyed its resources and determined its objectives can it decide what kind of students it wants. A manufacturer of men's clothing doesn't need lime stone nor hemlock but wool. Not until a college has surveyed a candidate's past in school and community and has estimated his future in terms of potentiality and purpose, can it decide his probable success in that institution.

One fourth of all the school children of the United States have failed to pass from one to four years of their schooling! One fifth of all those entering our colleges are failing the very first year. Let's stop this awful wastage of human life. Let's make it quite as important to find out in advance whether your son or mine is qualified to profit by a college course, as to endeavor to make our college subjects profitable to him. Let's enlarge the scope of our activities in informing ourselves about our candidates; then shall we be able to concentrate our efforts upon a smaller number of better qualified students. These will more nearly realize our ideals and will return to their communities with power and a purpose, attained through their college course.

WENDELL S. BROOKS
NORTHWESTERN UNIVERSITY,
EVANSTON, ILL.

EDUCATIONAL EVENTS

A BOSTON UNIVERSITY TOUR

AN educational tour, headed by Professors Harold Whitehead and Everett L. Getchell, of Boston University, which will include a group of thirty Boston business men, who will tour in England and Scotland, is planned for the summer. It is expected that Mr. Ramsay MacDonald and other distinguished Englishmen will welcome the group. Formal announcement and details of the tour have been prepared and issued by Professor Whitehead, who is finding business men interested and already making application to join the assembly.

The trip, projected by Boston University in cooperation with leading British educational, business and financial interests, is planned in aid of international understanding, trade and education. Leaders in many phases of British life will greet the assembly, among them being Sir William Beveridge, the economist, of the University of London.

Gathering at the Copley Plaza, the party will leave Boston on June 10, planning to return on August 17, and spending the interim on studying business methods, foreign trade, historic places, literary shrines and architectural masterpieces in England and Scotland. Thirty-four cities are included in the itinerary, and a continental tour will be arranged for those who may desire.

Actively cooperating with Boston University on the trip are the British Board of Education, Department of Overseas Trade, the University of London, the University of Manchester and the English Speaking Union.

After arrival in Great Britain, besides travel, the assembly's program includes informal discussions with leading British business men on their methods, lectures and conferences with British educators, interviews with government statesmen, inspection of the British Empire Exhibition and opportunity to attend the convention of the Associated Advertising Clubs of the World.

There will be study of the British banking system, operation of the Bank of England, British exporting methods, principles of free trade policy, domestic trade policies and Dominion cooperation. Visits will be made to the Bank of England, the Royal Exchange, the London docks, Covent Garden markets, the Reading biscuit factory, the Northampton shoe factory and other establishments.

TERCENTENARY EDUCATIONAL CELEBRATION

THREE hundred years of American education is to be the motif of a public exposition and a

conference of educators in New York City during Decoration Day week, as a feature of the New Netherlands Colonization Tercentenary celebration, organized under the proclamation issued by Governor Alfred E. Smith.

Industrial Education and Vocational Training, Domestic Science and Home Economics, Public Health and Hygiene, Visual Instruction and Music, Arts and Crafts are among the principal subjects to be included in the conference and exposition as announced yesterday from the committee headquarters in the Hotel McAlpin.

An official poster symbolical of 300 years of American education is to be selected in a prize competition among the elementary and high school scholars of the United States.

The General Committee of the Tercentenary Educational Conference and Exposition includes the Honorable John J. Tigert, United States Commissioner of Education; George J. Ryan, president of the New York City Board of Education; Mrs. A. H. Reeve, president of the National Congress of Mothers and Parent-Teacher Associations; Grace Schermerhorn, president of the New York State Home Economics Association; Joseph J. Eaton, director, Industrial Arts, Department of Education, Yonkers, N. Y.; Louise Stanley, chief of the Home Economics Bureau, U. S. Department of Agriculture; Edward W. Stitt, associate Superintendent of Schools of New York City; J. Blake Hillyer, president of the New York Physical Education Association; Carl H. Burkhardt, supervisor of physical education, City of Buffalo; Herman J. Norton, director of health education, Rochester, N. Y., and president of the New York State Physical Education Association; the Honorable L. P. Fuhrmann, and Mary L. Felton, Board of Education of the City of Buffalo; Edgar Fauver, professor of physical education, Wesleyan University; John Enright, commissioner of education of the State of New Jersey; J. George Becht, superintendent of public instruction of Pennsylvania; Augustus O. Thomas, commissioner of education of Maine; Clarence H. Dempsey, commissioner of education of Vermont; Ernest W. Butterfield, commissioner of education of New Hampshire; Walter E. Ranger, commissioner of education of Rhode Island; George W. Ford, superintendent of free schools of West Virginia; A. T. Allen, superintendent of public instruction of North Carolina; John Callahan, superintendent of public instruction of Wisconsin; McHenry Rhoads, superintendent of education of Kentucky, and others.

CURRICULUM REVISION IN DENVER

To supplement the work of committees of teachers who have been engaged for a year and a half in studying the various problems of the curriculum revision program, several educators of national reputation have recently been brought to Denver.

Under the leadership of Assistant Superintendent Threlkeld and under the direct guidance of Dr. L. T. Hopkins, professor of education, of the University of Colorado, and Mr. W. D. Armentrout, professor of education, of the Colorado State Teachers College, who have devoted about half their time to the Denver program during the past several months, these committees have studied what has been done the country over in the various fields, together with the underlying principles involved. In some cases tentative reorganized courses of study have been drafted. The work has reached the point where the opinions and suggestions of experts in the various fields was desired.

Dr. Ernest Horn, of the University of Iowa, spent the day of October 30 in conference with the superintendent and administrative staff on methods of procedure—how to capitalize on the contributions which have been made in the different parts of the country. He will return at a later date for further work in a special field.

Dr. F. G. Bonser, Teachers College, Columbia University, spent the week of January 28 in Denver, discussing the general problems of curriculum making. He gave special attention to the place and content of the industrial arts courses.

Dr. W. S. Gray, dean of the School of Education, University of Chicago, came for three days, February 4, 5 and 6, to discuss the methods of evaluating and selecting the content of the reading, language and English work.

Dr. Otis W. Caldwell, director of the Lincoln School, Teachers College, Columbia University, spent the week of February 11 to 15 in Denver. His time was given over largely to the various science committees.

Dr. F. G. Nichols, Harvard University, was in Denver on March 12, 13 and 14, discussing the problems involved in commercial education.

Dr. John C. Stone, Montclair State Normal School, Upper Montclair, New Jersey, was called March 19, 20 and 21, for suggestions in the elementary mathematics field.

Dr. Harold O. Rugg, Lincoln School, Teachers College, Columbia University, spent the week of March 25 with the committees which are organizing the social science courses for elementary, junior and senior high schools.

The schedule already arranged provides for bringing several other men to Denver during the remaining weeks of the school year to work on other phases of this program.

THE DEDICATION OF HAVILAND HALL

THE new building for the School of Education of the University of California was dedicated on March 25. The program follows:

THREE-THIRTY O'CLOCK, HAVILAND HALL

Unveiling of portrait of DR. ALEXIS F. LANGE, former director of the School of Education.

Presentation Address — FREDERICK HORRIDGE, chairman of portrait committee of the Phi Delta Kappa Fraternity.

Acceptance—BALDWIN M. WOODS, assistant dean of the university.

FOUR O'CLOCK, WHEELER AUDITORIUM

Chairman—DR. W. W. KEMP, dean of the School of Education.

Opening Remarks—W. W. CAMPBELL, president of the university.

The school of education and the university: FLORIAN CAJORI, professor of the history of mathematics, University of California.

The profession of teaching and its relation to the university: E. MORRIS COX, assistant superintendent of schools, Oakland.

The place of the school of education in the state program: WILL C. WOOD, state superintendent of public instruction.

The growth of schools of education in the United States: ELWOOD P. CUBBERLEY, dean of the School of Education, Stanford University.

The science of education: HENRY SUZZALLO, president of the University of Washington.

SEVEN-THIRTY O'CLOCK, HAVILAND HALL

Formal opening and inspection of Haviland Hall. Ushers from Men's and Women's Education Clubs will escort visitors through the building.

An exhibit of the work of the Berkeley Public Schools will be on view in the exhibit room on the third floor.

NINE O'CLOCK, HAVILAND HALL

Informal Program.

Chairman—DR. W. W. KEMP, dean of the School of Education.

Haviland Hall as a clearing house for educators: W. W. PATTY, representing the men students in the Department of Education.

Times and seasons: PROFESSOR JOHN ADAMS, University of London.

The social program of the education clubs: MARIAN ROWE, representing the women students in the Department of Education.

The educational aspects of the exhibit room of Haviland Hall: P. W. NAHL, assistant professor of freehand drawing and art anatomy.

The potential power of the teaching alumni of the University of California: ROBERT SIBLEY, secretary of the Alumni Association of the University.

As a part of the regular Charter Day Exercises on March 22, Walter Morris Hart, dean of the university, accepted for the regents of the university, a marble chair for the Greek Theater, dedicated to Alexis F. Lange. Mr. A. A. Gray will present the chair on behalf of a number of friends and former students of Dr. Lange who have chosen to perpetuate their respect and reverence for the former director in this manner.

THE CONFERENCE OF EDUCATIONAL MEASUREMENTS

THE eleventh annual Conference on Educational Measurements will be held at Indiana University on April 18 and 19, 1924. This year a new feature is added in having a Conference for Elementary Supervisors on April 17, the day preceding the measurements conference. The Thursday program for the supervisors is planned to include subjects connected with the technique of supervision. The opening day of the measurements conference program is planned to include some measurements topics which would be of interest to the supervisory group, since many of them will stay over for the Friday session.

The principal speakers for the measurements conference will be Dr. Walter F. Dearborn, of

Harvard University, and Dr. Clifford Woody, of the University of Michigan. Other speakers will be Dr. C. G. F. Franzen, Dr. H. H. Young, Dr. G. H. Alderman, and Dr. H. F. Clark, of Indiana University. President William Lowe Bryan will give the address of welcome.

Dr. Dearborn will give three talks on the following subjects: "Individual development as shown by repeated measurements"; "Reliability and uses of intelligence tests"; and "Special disabilities in learning to read." Dr. Woody will speak on the following subjects: "A testing program for arithmetic"; "The advantage of ability grouping"; and "The permanent effects of the teaching of spelling."

Mr. A. S. Barr, assistant director in charge of supervision in the public schools of Detroit, will be the principal speaker at the Supervisor's Conference on Thursday, April 17. He will speak on "The technique of criticism" and on "The application of scientific methods of supervision." Other subjects will be discussed by some of the supervisors from the schools of Indiana, by members of the faculty of the school of education, and by graduate students in education who are engaged in studies of elementary supervision.

H. L. SMITH,
Dean

THE OREGON COMPULSORY PUBLIC SCHOOL LAW

OREGON'S compulsory public-school law was declared unconstitutional on March 31, in an opinion rendered in Federal Court.

The court made it plain that it acted on the proposition that the constitutional rights of parents have been contravened by the law just as much as the rights of the complaining organizations. "Parents and guardians," said the decision, "have an interest in the constitutional rights of complainants to see that their schools may be maintained for the mutual benefit and use of the parties concerned."

The decision declared that the court has the right to enjoin the enforcement of a state law that deprives a citizen of constitutional rights or deprives a corporation of its property without due process of law, and then proceeds to enjoin the defendants from enforcing the law on those grounds.

The law provides that parents or guardians of children between 8 and 16 must send the children to public schools during the public school term or be guilty of a misdemeanor for each day they are kept out.

The opinion was rendered after a hearing by Circuit Judge W. B. Gilbert and District Judges C. E. Wolverton and R. S. Bean. The law, which requires children of grammar school age to attend a public school, was adopted by initiative at a general election in 1922 and was to have become effective in September, 1926.

The decision was in cases brought by the Hill Military Academy of Portland, a private school for boys, and by the Society of Sisters of the Holy Names of Jesus and Mary, a Catholic institution having charge of parochial schools. The defendants are Governor Walter M. Pierce, Attorney General I. H. Van Winkle and Stanley Myers, district attorney of Multnomah county.

The compulsory public school law was adopted by a vote of 115,506 to 103,685, after a heated campaign. The bill originally proposed by the Scottish Rite Masons became one of the main issues in the general election of 1922, being backed by the Federated Patriotic Societies and the Ku Klux Klan. The law was defined on the ballot as follows:

> Requiring any parent or guardian or other person having control, charge or custody, of a child over 8 and under 16 years of age, from and after September 1, 1926, to send such child to a public school during the entire school year, excepting (a) children physically unable; (b) children who have completed the eighth grade; (c) children between the ages of 8 and 10 living more than three miles from a public school, except when transportation is furnished; (d) children taught by parent or private teacher.

Governor Pierce states that the case will be appealed to the United States Supreme Court.

THE SUMMER SCHOOL OF THE UNIVERSITY OF UTAH

THE Utah Agricultural College will conduct a National Summer School this coming summer. This summer session is national in that students are expected from all parts of the United States, attracted by both the outstanding teaching faculty and the wonderful summer climate of northern Utah and because the visiting faculty secured is coming from the largest educational institutions from the Atlantic to the Pacific coast.

The following teaching faculty of sixteen prominent educators has been secured: Professor W. C. Allee, Department of Zoology, University of Chicago; Dr. Emmett D. Angell, Yale, Harvard, Wisconsin, Recreational Leadership; Professor Eliot Blackwelder, head of the Department of Geology, Stanford University; Professor E. C. Branson, head of the Department of Rural Sociology, University of North Carolina; Professor Henry C. Cowles, Department of Botany, University of Chicago; Professor Raymond Franzen, Department of Education, University of California; Professor R. S. Knappen, Department of Geology, University of Kansas; Professor Frederick Merk, Department of History, Harvard University; Dr. R. C. McLain, supervisor of health education, Detroit, Michigan; Professor E. V. McCollum, head of the Department of Human Nutrition, Johns Hopkins; Professor C. O. Reed, Department of Agricultural Engineering, Ohio State University; Professor E. L. Thorndike, Teachers College, Columbia University; Professor Frederick J. Turner, Professor of History, Harvard; Dr. Thomas D. Wood, head of the Department of Physical and Health Education, Teachers College, Columbia University.

In addition, the following lecturers have been secured: Professor John Adams, University of London, England; Dr. William G. Anderson, director of physical education, Yale University; Liberty Hyde Bailey, dean emeritus of the New York State College of Agriculture; David Starr Jordan, president emeritus of Stanford University; Professor Shailer Matthews, dean of the Divinity School, University of Chicago; Dr. E. A. Steiner, head of the Department of Social Science and Applied Christianity, Grinnell College, Iowa; Dr. A. E. Winship, editor of the *Journal of Education*, Boston. These lecturers will give two lectures daily for one week.

EDUCATIONAL NOTES AND NEWS

HARLAN FISKE STONE, appointed Attorney-General of the United States by President Coolidge on April 2, was lecturer on law at Columbia 1899–1902, professor of law 1902–5 and dean of the Columbia University Law School from 1910 until his withdrawal from law-school work last fall. He has been president of the American Association of Law Schools and active in the Council on Legal Education of the American Bar Association.

DR. HORACE LAMB, F.R.S., formerly professor of mathematics in the University of Manchester, has been nominated to be president of the British Association for the Advancement of Science for the Southampton meeting in 1925.

THE Victorian Medal of the Royal Geographic Society of Great Britain has been awarded to Professor John F. Hayford, director of the College of Engineering of Northwestern University, for notable achievement in establishing the theory of isostasy. The presentation will take place in London in May at the anniversary celebration of the society.

DR. THOMAS W. BICKNELL, who was president of the National Education Association in 1884, will celebrate his ninetieth birthday on September 6.

LE CONTE HALL, the new physical laboratory of the University of California, was dedicated on the evening of March 24. With Professor E. P. Lewis presiding, addresses were given by Professor George C. Edwards, of the University of California; Dr. J. C. Merriam, president of the Carnegie Institution of Washington, and President W. W. Campbell. The building is dedicated to the brothers, John Le Conte, professor of physics, 1869 to 1891, and president of the university 1876 to 1881, and Joseph Le Conte, professor of geology and natural history, 1869 to 1901.

THE new eleven-story residence hall for women now being erected by Columbia University on East Field will be named Johnson Hall in recognition of the services of Samuel Johnson, first president of King's College, and of his son, William Samuel Johnson, the first president of Columbia College after the Revolution.

DR. ALFRED C. HANFORD has been appointed director of the Summer School at Harvard University for 1925. Dr. Hanford is assistant professor of government, tutor in the division of history, government and economics, and is acting chairman of the board of tutors in the division of history, government and economics during the absence of Professor H. H. Burbank, who is this year exchange tutor to King's College, Cambridge, England.

PROFESSOR ERNEST F. LANGLEY, of the Massachusetts Institute of Technology, has been appointed acting secretary of the American Association of University Professors, during the absence in Europe of Professor H. W. Tyler.

THE REVEREND ALWYN TERRELL PETRE WILLIAMS, who for some years has been second master, has been appointed head master of Winchester College, England, in succession to Dr. Montague Rendall, who will retire at the end of the summer term.

JOHN E. LYNCH, of Worcester, principal of the Woodland Street School, has been elected president of the Massachusetts Teachers Federation.

LEBARON RUSSELL BRIGGS, dean of the faculty of Arts and Sciences at Harvard University, has resigned as chairman of the Harvard athletic committee after 18 years of service.

JUSTIN O. WELLMAN, superintendent of schools of Amesbury, Mass., has been appointed assistant professor of education at the University of New Hampshire. Professor Wellman was principal of Colby Academy, New London, Conn., for fourteen years.

DR. NILES CARPENTER, instructor in social ethics, Harvard University, has been appointed head of the sociology department and professor of sociology at the University of Buffalo.

DR. CHARLES A. S. DWIGHT, professor of education at Keuka College, has again been appointed a member of the faculty of the Asheville (N. C.) Summer School. His courses will be on the applications of psychology to education.

MRS. HELEN L. GRENFELL, formerly state superintendent of Colorado, is a candidate for Congress of the Democratic party for the Denver district.

G. W. SCOTT has been elected superintendent of building and construction at Long Beach, California, at a salary of $4,800.

RUSSELL CARTER, who was specialist in music for the New York State Department of Education, 1920–1922, and supervisor of music in the city of Mount Vernon, N. Y., 1922–1923, has reentered the service of the New York State Department of Education as state supervisor of music.

IT is announced at Harvard University that the Wertheim Fellowship, available this year for the first time, has been awarded to John David Houser, of San Francisco, one of forty-three applicants. Mr. Houser received his A.B. from Leland Stanford, Jr. University in 1910 and his A.M. in 1912. His graduate work has been in connection with industrial psychology. He has taught in the California public schools, and during the war was a captain on the psychology staff of the U. S. Army. He has had experience in research and administration in personnel work in several industries. Mr. Houser is president and field representative of the Bureau of Management Research of San Francisco. His research work will be on the Business Executive and Industrial Relations, and will be carried on during the academic year 1924–25. The Jacob Wertheim Research Fellowship for the Betterment of Industrial Relationships was the gift of the family of the late Jacob Wertheim, of New York. The purpose of the fellowship is to foster better relations between capital and labor. The committee administering the fellowship consisted of Professor F. W. Taussig, chairman, Professor M. T. Copeland and Dr. Niles Carpenter, secretary.

THE appointments of Ellsworth Grumman and Bruce Simonds to assistant professorships in the Yale School of Music are announced. Mr. Grumman and Mr. Simonds are graduates of Yale College in the classes of 1913 and 1917, respectively.

AT the Carnegie Institute of Technology, Professor O. T. Geckeler has been made head of the department of mathematics; Assistant Professor H. S. Lightcap has been promoted to an associate professorship, and R. P. Johnson, E. A. Whitman and E. A. Starr have been promoted to assistant professorships.

PROFESSOR C. H. RICHARDSON, of Georgetown College, Kentucky, has been granted leave of absence for the current year, and is studying at the University of Michigan. Mr. Guy Stevenson is acting for the year as professor and head of the department.

PROFESSOR PAUL SHOREY, head of the department of Greek language and literature at the University of Chicago, who sailed on the

Olympic, March 22, for Belgium, will give a series of lectures at the Belgian universities on Plato and Aristotle. One public lecture will be given at the Foundation Universitaire in Brussels on "Le Platonisme dans la Littérature Française" and four lectures on "L'Evolution d'Aristote" to be repeated at each of the four universities of Brussels, Louvain, Liege and Ghent. Professor Shorey will return to Chicago about July 25 to give courses in the second term of the summer quarter.

PROFESSOR A. PORTEAU, of the Universities of Clermont-Ferrand and Lyons, France, will conduct courses at Columbia University on French phonetics and French civilization, and Professor Joao de Providencia, of the University of Coimbra, Portugal, will conduct courses on the mutual influence of Portuguese and English literature and on the Portuguese language.

PROFESSOR JOHN M. COULTER, of the University of Chicago, is lecturing at the colleges and universities of China and Japan, on the invitation of a committee of Oriental educators, his subjects pertaining to his own special field of botany, science in general and the relations of science to religion and civilization.

PRESIDENT JAMES ROWLAND ANGELL, of Yale University, formerly dean of the faculties at the University of Chicago, delivered a lecture at the latter university on "The place of education in a democracy," April 3, on the William Vaughn Moody Foundation.

PRINCIPAL SAMUEL CHADWICK, of Cliff College, England, will deliver the Joseph M. Carr lectures at Mount Union College this year. Principal Chadwick is the delegate of the Wesleyan Church to the General Conference of the Methodist Episcopal Church which will be held in Springfield, Massachusetts, in May.

A SUB-COMMITTEE of the Committee on Academic Freedom and Academic Tenure of the American Association of University Professors has been appointed to make an investigation of conditions at Clark University. The members are: Professors A. O. Lovejoy, The Johns Hopkins University; R. K. Root, Princeton University; E. A. Ross, University of Wisconsin, and H. S. White, Vassar College.

THE Harvard Teachers' Association will hold its thirty-third annual meeting in Cambridge on Saturday, April 26. The subject for discussion will be "The health of youth." The morning session will be held in Sanders Theater, and luncheon will be held in the Union at noon; the speakers will be introduced by Professor G. E. Johnson, associate professor of education at Harvard. Dr. Clark W. Hetherington, of New York University, will open the morning program with a talk on "Physical education and general education." Dr. Charles H. Keene, of the Pennsylvania State Educational Department, will then speak on "A state program in school health." Thomas C. Ferguson, director of physical education at New Bedford, will speak on "Problems in physical training in city schools." Norman W. Fradd, of the Harvard department of physical education, will conclude the morning program with a talk on "Posture, body mechanics and health." After the luncheon at the Union, Dr. Roger I. Lee, professor of hygiene, will open the afternoon program with a talk on "What can be done for health through the teaching of hygiene." President Ada L. Comstock, of Radcliffe College, will speak on "Health and college life." William J. Bingham, former Harvard track coach, will close the program with a talk on "Athletics in schools and colleges."

CLARK UNIVERSITY was host to a number of experimental psychologists, April 4–6. Dr. Edmund C. Sanford, head of the department of psychology at Clark, was in charge. The following representatives of the various colleges and universities were scheduled to be present: Dr. E. B. Titchener, Dr. H. P. Weld, Dr. L. B. Hoisington, Dr. Homer G. Bishop, Dr. H. P. Dollenbach and Dr. J. P. Nafe, of Cornell University; Dr. Edwin G. Boring and Dr. Herbert J. Langfeld, of Harvard University; Dr. John E. Anderson, of Yale University; Dr. Samuel Fernberger, of the University of Pennsylvania; Dr. Howard C. Warren, of Princeton University; Dr. Raymond Dodge, of Wesleyan University; Dr. E. S. Robinson, of the University of Chicago; Dr. Samuel P. Hayes, of Mount Holyoke College; Dr. David C. Rogers, of Smith College; Dr. Foster P. Boswell, of Hobart College; Dr. Christian Ruckmick, of Wellesley College, and Dr. Robert S. Woodworth, of Columbia University.

Massachusetts Hall, the oldest college hall in North America, constructed as a Harvard dormitory in 1720, was damaged by fire starting on the third floor on April 6. Early discovery of the blaze, which firemen said was caused by defective wiring, and prompt work by the fire department, saved the building. The damage was estimated at about $7,000.

The University of Colorado has received a grant of $180,000 from the General Education Board and a gift of $120,000 from Mrs. Verner Z. Reed, of Denver, Colorado, to provide equipment for the new medical school and hospital plant now being erected in Denver. This consists of a large central building to house the medical school and general hospital, a psychopathic hospital, a nurses home and training school, and a power and heating plant. In addition to the gifts mentioned above, the funds for the new institution have been contributed as follows: the General Education Board has given $700,000; the Carnegie Corporation, $100,000; the State of Colorado, $950,000, and private individuals, $160,000. The school will be opened in September.

An anonymous legacy of $200,000 for the establishment of an endowment fund for research work in the department of pediatrics has been received by Cornell University Medical School.

By the will of the late Dr. Emmett Holt, Columbia University receives the sum of $25,000 for the establishment of a fellowship for the study of diseases of children. The Babies' Hospital of New York City also receives $25,000 to be used for the support of research work in the wards and laboratories of said hospital.

The residuary estate of Miss May Friend Bennett, founder of the school at Millbrook, Conn., that bears her name, is left to provide a corporation to be known as "The Bennett School of Liberal and Applied Arts."

Georgian Court, the estate of the late George Jay Gould, at Lakewood, N. J., has been sold for about $800,000 to Mount St. Mary's College of Plainfield. Georgian Court College will be the name of the institution when it opens in its new home on October 1. Meanwhile $300,000 will be spent upon improvements to be completed before the opening of the college in the autumn. The new purchase will mark division of the present educational establishment, the collegiate branch being transferred to Lakewood and the academic courses remaining at Plainfield. The college and academy are conducted by the Roman Catholic Sisters of Mercy.

A project to raise $5,000,000 for the establishment of a new woman's college at Bennington, Vt., will be launched at a meeting to be held at the Colony Club in New York City on April 28. Behind the movement, the announcement said, are the presidents of Wellesley, Radcliffe, Mount Holyoke, Smith, Barnard, Bryn Mawr, Swarthmore, Cornell, Middlebury and a number of other institutions. Proponents of the plan point out the necessity for a new woman's college in the eastern section of the country because the present colleges are unable to accommodate the flood of applicants. "It is proposed to institute a three-year collegiate course in the new institution, with shorter summer and Christmas vacations," the announcement asserted. "This step is being considered in order that the expenses of parents may be materially reduced." Among those who are expected to urge the project at the New York meeting are Miss Ada L. Comstock, president of Radcliffe; Dr. W. A. Neilson, president of Smith College, and Dr. W. H. Kilpatrick, of Teachers College, Columbia University.

The vocational school, secondary department, of the Kansas State Agricultural College, will be discontinued at the close of the present school year, according to an announcement by A. P. Davidson, head of the school. The development of high schools in Kansas, together with the vocational work under the Smith-Hughes program, has materially decreased the demand for a secondary vocational school. No more students will be admitted, but the students now enrolled will be permitted to finish their work begun in the school.

The United States Civil Service Commission announces an open competitive examination for teacher of home economics, and principal of home economics. The examinations will be held throughout the country on May 7 and 8, respectively. They are to fill vacancies in the Indian service and in positions requiring sim-

ilar qualifications. The entrance salaries for teacher of home economics range from $760 to $840 a year; the entrance salaries for principal of home economics range from $1,000 to $1,200 a year. In addition to the basic salaries appointees are allowed the increase of $20 a month granted by congress, and they are also allowed furnished quarters, heat, light and subsistence free of cost. The duties of appointees to the position of teacher will be to teach home economics in Indian schools. The duties of principal of home economics will be to be the head of a department of home economics education, to organize the school, plan courses of home economics suitable for the elementary and secondary schools, and to outline methods of presentation. Full information and application blanks may be obtained from the United States Civil Service Commission, Washington, D. C.

EIGHT students and a teacher were injured when a quantity of gunpowder exploded in the laboratory of the Toronto, Ohio, High School, on March 6. Professor Harold M. Ruch, instructor, and four of the students are in a critical condition. The explosion was caused by an electric spark which ignited the gunpowder during an experiment with electricity. There were about twenty-five students in the laboratory at the time. The explosion wrecked the laboratory and threw the remainder of the school into a panic.

AN International Office for Universities, the creation of which was authorized by the last League Assembly, has been formed at Geneva. The scientific and technical direction of this office is in the hands of a committee formed of Professor de Reynold, Switzerland, Professor A. Coleman, United States, Professor de Halecki, Poland, and Professor Luchaire, France. At its meeting in Geneva this committee established the plan of the bulletin which is to be issued every three months with a view to giving every sort of information on the international aspects of university life. It has also determined the means of connecting the international office with the national university offices and the international association of students.

WE learn from the London *Times* that the first minutes of the new Education Committee for Belfast, appointed under the recent Education Act, came before the Belfast Corporation on January 1. The committee recommended the appointment of Dr. Hanley, director of technical education, as director of education for the city, with an increase of £100 per year for three years, when his salary will reach £1,500. Arrangements were being made to obtain a census of children of school age, as it had been suggested that there were 15,000 children for whom there was no school accommodation. Forty schools were being transferred to the new authority, and provision was made for the maintenance of 160 voluntary schools. Fifty scholarships of £30 each would be established, in addition to the existing 38 scholarships in secondary schools. It was also decided to grant £10 to parents of boys who won scholarships in addition to fees for books for these children, to compensate parents for the loss of the children's earnings during the period of the scholarships. A sum of £80,000 would be spent on providing new schools during the coming year and it was estimated that the sum of £500,000 would eventually be required for that purpose. Notwithstanding this expenditure the burden on the rates would be £1,000 less than last year, as the Northern Ireland government would pay two thirds of the expense. An amendment to vote £3,500 for the provision of meals for necessitous school children, and £1,500 for clothing, when required, was adopted, and the other recommendations of the committee were accepted.

SIX hundred young Russians are now in educational centers in Europe as a result of the contributions by Americans to the Committee for the Education of Russian Youth in Exile. Thomas Whittemore, head of the committee, has again returned to Europe on his tour of inspection of the various universities. These students are making valuable records in scholarship, but, with unsettled conditions, the expenses have increased and $375 is now needed for the support and education of a student for one year. Checks for any amount should be made payable to Lee, Higginson & Company and sent to Seth T. Gano, treasurer, 44 State Street, Boston, Massachusetts.

A SUIT has been filed against Washington township, Ohio, by a taxpayer who claims that the

township owes his boy a high school education. The township abandoned its high school without, however, the usual three fourths vote required by law. The complainant sent his boy to an adjoining township and claims $222 expended by him for transportation.

SPECIAL CORRESPONDENCE

CHINESE STUDENTS' READING

THERE is a firm in the west which advertises a miscellaneous collection of books at five cents a volume. A few weeks ago, we put this omnium gatherum out on a bulletin board, and suggested that a joint order might be sent in. In less than two days about 1,300 volumes were ordered, and an analysis of the list brings out some interesting facts.

As is natural, there is a certain amount of ordering for practical and economic reasons; thus, those plays of Shakespeare which lead the list are those which are read in the classroom: "Julius Caesar" and "The Merchant of Venice." A book of English synonyms is also largely called for, and a volume called "Great English Poets" is bought not primarily for reading, but for possible reference. A book of "English Proverbs" is wanted, not for the advice it contains, but as a compendium for use in essay writing. Practical, too, but distinctly actuated by Chinese motives, is the call for a book on how to live one hundred years; every Chinese wishes Fu (happiness), Lu (emoluments) and Shou (longevity).

Though these boys are adolescents, the adolescent motives in choice are surprisingly few, especially those which tend toward expression of sex. To my mind this is a gratifying phenomenon, since the average Chinese boys live in a terribly sex-suppressed world. The complex, however, struggles upward, as is seen by the high favor of "Romeo and Juliet," the next most popular play of Shakespeare after the two mentioned above, and the only other one called for in any quantity. Interest in Checkov's "The Kiss" is explained on similar grounds, with the additional fact that kissing is not a public performance among the Chinese and has only sexual connotations. Mothers, for example, even those who have studied abroad, are more apt to smell their children than to kiss them. Of the books which might possibly be chosen for prurient motives surprisingly few are wanted. More boys want to know how to be an orator or how to correct "Faults in English" than about the "Evolution of Love," and only one wishes to find out what Mrs. Sanger feels about "What every girl should know." A number are interested in "Manhood: The facts of life" and in Besant's "Marriage," while a bare half dozen wish to stand "On the threshold of sex." It must be admitted that one of the most called for books is "How to love," but with Chinese morals, manners and customs on this point in a state of transition, it is no wonder that the boys grope for help from the Occident. Our college has weekly movies, and what is shown students on this particular subject in the films, unfortunately, does nothing to increase their respect for womanhood or occidental morality.

In the series of debates offered, the principal choices are of those which impinge on live topics in present day China. The Sanger-Russell debate on birth control, Greeley vs. Owen on marriage and divorce, and the Harris-Ward discussion on the meaning of life, are vital for China to-day. Some of these boys are already married to girls of the old-fashioned type, and to them the question of divorce is not academic; they feel sure that they will sooner or later meet some one in whom they will get interested, and they want to know how to free themselves from their shackles. Mrs. Sanger's recent visit to the Orient is still fresh in their minds; she was touted in all the papers, and her ideas and those of Malthus are widely known to the young Chinese, who recognize that over-population is one of China's greatest evils. Certainly, too, in a transitional period like this for young China, many will want to know what life means, what new values there are in it, if any, and where the "pou sto" may be found. These boys are thinking boys.

Under the caption "Philosophy and religion" there is not much chosen, or, rather, the choices are very scattering. Interest in metaphysics is not to be expected of these boys, though we might have expected more interest in psychoanalysis than our list shows, since the discussions on this branch of psychology are frequent in the Chinese journals. But Ellis, who is known in China, is hardly called for at all. At first sight, the large call for "Plato's Re-

public" may seem to have a philosophical nexus, but the attraction there is obviously the word "Republic." Machiavelli's "Prince" was not wanted by anybody.

The choices under "Science" are also scattering. The interest in the biographies of scientific men is keen; not as many ask for the "Introduction to Einstein" as might have been expected. Einstein has, however, been translated into Chinese, and they may already have had enough of him. In "Poetry," too, the choices are scattering. Dante is more popular than Omar; the most popular book is Shakespeare's "Sonnets." As most of these books are called for by from five to six boys, and as this is about the number of those in the poetry section of the Literary Club, I judge that they are filling up their libraries, and that the poetry choices are those of a somewhat narrow group.

Maxims and epigrams are also not very popular. Naturally, there is some choice of proverbs, Chinese and others, but mostly they want to know "What great men have said about women" and the converse. "The maxims of Napoleon" interest them because of his outstanding place in history; this is intellectual curiosity. In biography their choices are more interesting. Most asked for is the "Life of Bismarck"; then follows Tolstoi and finally Lincoln, whose speeches, with those of Wilson, are also popular. No one wants the "Life of Jack London"; two wish to read Renan, and a few are interested in Paine. In history, Hugo's "Waterloo" is the most desired book.

In "Fiction," I can not account for the popularity of Morris's "Short Stories"; eleven want them. De Maupassant's tales are liked by the young of all countries, and the library copies are always out. This accounts for the choice of him. In general, the fiction list shows that the students are looking for simple and interesting reading, and are not particular about literary quality. In the division "Literature," however, their choices are better; Goethe's "Essays on literature and art" are the most called for; Thoreau's "Friendship" comes next, a good thing in a boy's school. Montaigne's "Love" and Bacon's "Essays" tie for next place. Voltaire's "Essays" and Huxley's "Liberal Education" keep up the level. Humorous books fall flat. There is almost no demand for them.

All in all, the choices show an interest in China's problems, especially as they relate to the dawning of individualism in the Orient; there is an interest in love and in country; there is an interest in thought and education, and, especially, in great men, in the Goethes, the Bismarcks, the Voltaires of the West. Ambition is calling, dreams of greatness arise, the Occident is the source of new personal ambitions, vistas, inspirations.

GEORGE H. DANTON

TSING HUA COLLEGE
PEKING

DISCUSSION

AN EDUCATIONAL CONFESSION OF FAITH

IN the following brief and perhaps rather dogmatic fashion are stated some of the things that a modern school ought to do and the ideals that it ought to have. I have tried to exclude matters of mere personal opinion and include only those factors that are fairly well established as scientific facts.

(1) The aim of public school education is to fit boys and girls to make a living and to enjoy the things that have eternal value.

(2) We should select as teachers men and women of the highest native ability and give them a thorough and extensive training for their work.

(3) We should closely relate the curriculum to practical life.

(4) We should make the connection between the school and community *real* and *vital*.

(5) We should emphasize the study of the *world to-day* in all its phases.

(6) The high school curriculum should be adapted to the lives the children are to lead. The high school should cease to be merely a preparatory school for higher institutions.

(7) In most of the school work we should study *things* and not merely *about* things.

(8) We should have more laboratory and field study.

(9) We should improve our teaching wherever possible by the use of more illustrative material.

(10) We should teach subjects in their real and natural settings so that the proper associations may be formed.

(11) We should put meaning into the subjects taught and relate the subjects to one another and to life.

(12) We should secure a *real* cooperation between parents and teachers, and should remember

that the schools *belong* to the parents and are *for* their children.

(13) We should eliminate the rubbish from the public school curriculum.

(14) We should eliminate from the curriculum all foreign languages, living or dead, except as they may be related to specific vocational or professional courses.

(15) Each study in the curriculum should be there because of its own inherent, specific worth and not because of any supposed transfer value it may have.

(16) We should put into the curriculum more nature study in the lower grades and more science in the upper grades.

(17) We should have more and better teaching of music and art.

(18) Special vocational training should be provided wherever possible.

(19) Elementary psychology and sociology should be taught in high schools to give the pupils a better knowledge of human nature and of society.

(20) All children should have access to a good library, and one of the main functions of the schools should be to teach children to read.

(21) We should try to develop in children an appreciation of the beautiful in art and nature.

(22) Pupils should be classified according to ability so that we can do the best for each child. Provision should be made for each child to progress as fast as he is able. The curricula should be adapted to the varying abilities of the different groups.

(23) We should provide specialized departments and curricula for pupils having special abilities.

(24) We should provide manual and trade schools for subnormal children and specialized instruction for children having physical defects.

(25) The child's achievement should be compared with his ability. We should try to secure an achievement comparable to ability in the case of each child.

(26) The grade reports sent to parents should give the rank held by the child in his class.

(27) We should be more careful and more exact about our educational aims and results, using all the means modern science has provided for measuring and testing the results of our teaching.

(28) We should provide equipment and opportunity for children to fulfill their natural desire for manipulation.

(29) We should teach children to plot learning curves showing their progress in acquiring skill and knowledge.

(30) Children should have thorough and extensive drill in all essential and desirable skills, and this drill should be based on well-known psychological laws.

(31) We should use all incentives for study that are scientifically valid and that have no bad after-effects.

(32) In teaching children how to study, we should teach them to use the most economical methods.

(33) We should concentrate our educational efforts instead of scattering them.

(34) We should raise the standards of physical training.

(35) Competent physicians should be regularly employed to make physical and medical examinations of school children.

(36) The school authorities should see that every child is put into as good physical condition for study as is practically possible. Particular attention should be paid to hearing, vision, throat, teeth and all important vital organs.

(37) Every school should have the services of a psychological expert, who may be the principal, the superintendent or a man employed for this special work.

(38) The schools should take account of the wide sex differences that exist in the development of children.

(39) The schools should likewise take account of the different needs and interests of the two sexes.

(40) We should consolidate country schools as one means of improving them.

(41) We should emphasize the importance of work and should develop high ideals of work and the products of work.

(42) We should try to develop the spirit of true democracy, emphasizing real instead of superficial and ephemeral values.

W. H. PYLE

UNIVERSITY OF MISSOURI

MAKING THE TEACHING PROFESSION UNTENABLE

We teachers certainly have more unreasonable requirements made of us than the members of any other profession. That is one reason why the supply of adequately trained teachers is insufficient, and why there is so large a proportion of persons leaving the profession.

These remarks are prompted by the item on page 71 of SCHOOL AND SOCIETY of January 19, in which a superintendent of schools in New York state was reported to have been through a dismissal and reinstatement in which "the use of tobacco" was the only charge mentioned. In

no other line of work would this have been of any account whatsoever; we have yet to read of a lawyer or doctor or business man who lost his position because of "use of tobacco."

On January 24, the daily press reported a further aggression upon the teachers, in that North Carolina has forbidden the teaching of evolution. We do not find that the medical profession is regulated by law as to what medicines it may use; nor the legal profession as to how it may plead cases; nor the engineers as to the structural materials to be used. We, the teachers, are picked out as the profession to be regulated and bossed by outsiders.

It is no wonder then that many of the teachers find their profession untenable. The honest and trained teacher expects to be treated as a professional expert, able to choose what he will do in his professional work—not as a low-grade servant to be bossed by those untrained in his work. It is all very well to talk about the economic factor as causing a shortage of properly trained teachers, or to lament the huge "turnover of personnel" in the schools; but until the type of doings mentioned above, making the profession untenable for the teacher with a sense of professional self-respect, are changed, the evil situation will continue.

STEPHEN G. RICH

ESSEX FALLS, N. J.

QUOTATION

"AN INEXCUSABLE SITUATION" IN OHIO

SCORES of cities and towns in Ohio and hundreds of rural school districts find themselves very much embarrassed because of lack of funds to continue their schools the length of time required by law. Quite a number have already been closed for the year and hundreds of others see no other way in sight.

The long chain of events that have led up to this pretty mess make a story too long for our pages. We are astonished to read in the daily newspapers that state and county officials as well as local school board members seem very much surprised to find themselves suddenly facing such a critical situation that the Attorney General depicts in a telegram to the Governor, March 1, the most urgent need of an immediate call to re-convene the General Assembly to take care of this great emergency. His telegram reads:

"Large numbers of schools are closing for lack of funds. Thousands of children will be deprived of schooling which may injure their education and cripple them for life. Unless you have some plan to open the schools immediately, will you not in this great emergency convene the legislature? There is a surplus to-day in the state treasury of $22,000,000 while many school districts are bankrupt. My department will gladly assist in preparing necessary legislation for immediate relief if the legislature convenes."

But the Governor is without constitutional authority to re-convene the General Assembly and that body refuses to meet without a call from the Governor. When the General Assembly quit work last spring, almost a year ago, it "took a recess for five minutes," and that five minutes has not yet expired, according to the clocks in the State House! Politics, impure and simple! And tens of thousands of innocent children all over Ohio must suffer and thousands of helpless teachers must go unpaid! There ought to be some way to see that the state's government should function. And there is a way, sure and certain, and the people are more and more determined to place the responsibility where it belongs.

But the General Assembly was in session for several months in 1923 and the present situation was clearly forecast to it and should have been just as clear to its members then as now. There is no mystery about the present financial crisis facing the schools and the cities of the state. There isn't a single condition that was not plainly forecast a year ago—even as far back as 1911, when we got ourselves into this fix by the enactment of the Smith law. That was the beginning of a long chain of errors which were just as clear then as now to any one who dared to study the question honestly.

The same day the Attorney General sent a telegram to the Governor, the State Treasurer announced a balance of $35,000,000 in the State Treasury, most of which was in the General Revenue Fund. There is a difference between a balance of $35,000,000 and a surplus of $22,000,000. The surplus is what is interesting. Of course, many items and contracts are already charged against the balance in the

treasury. But it requires from 12 to 18 months to receive the money in process of collection through taxation, so that by the time all outstanding bills are paid, the state will have collected more than the sum total of these bills so that by that time the surplus will probably be larger than it is now. That has been the history of this surplus ever since the days of Governor Nash, when Ohio thought that a surplus of a million dollars was ample and as much as the state could safely handle. A few years later some state officials got into serious trouble because of this small surplus—not because it was small but because it was large. The state prides itself on the fact that the banks handling our state inactive balances (not daily subject to checks) are paying from 3 per cent. to 5.73 per cent. interest and our active balances pay from 2.57 per cent. to 3.78 per cent. interest. A sixth grade schoolgirl can compute the net profits to the banks on $35,000,000 at the difference between these rates and the rates at which money is loaned to-day. Of course, the interest the state receives is infinitely better than the rule that prevailed when state funds were not so loaned and so safeguarded.

But Ohio would be better off by many millions a year if she would keep her state surplus down to a million dollars, reduce the taxes by a like amount, and remove temptation from those who profit by the present system.

With a wealth that places Ohio second to no state in this great republic, and with a bundle of contradictions in our revenue laws and thousands of innocent children being penalized by the "bone-headedness" of their elders, it would seem that out of a sense of self-respect the state would proceed speedily to correct this inexcusable situation.

As we write this, several cases are being heard by the State Supreme Court and it is hoped that a court mandate may preserve that portion of our State Constitution, Article 6, Section 2, which says: "The General Assembly shall make such provisions, by taxation or otherwise, as . . . will secure a thorough and efficient system of common (public) schools throughout the State." Certainly, as this mandate has never been repealed, it should take precedence over every statute that tends to nullify it.—*The Ohio Teacher.*

A FEDERAL EDUCATION BUILDING

The federal constitution recognizes state control of education. This policy is justified and necessary in view of the impossibility of adequate understanding of the local state education problems by any federal staff of educationists. The states have created state departments of education with legal powers of leadership and these are rapidly gaining in quality of personnel and in breadth of experience. But it is necessary to arrange ways and means by which this state leadership may be federated so that there will be collaboration between the state departments of education, assisted by teachers colleges, schools of education and normal colleges, in working out plans for American education and for cooperation between the states, to the end that our education work may be national as well as state in its characteristics.

President Coolidge said to a committee of the National Education Association which consulted him seeking his interest in the federal education bill:

> We have worked on the problem of education in this country for nearly three hundred years. . . . We have never solved it. . . . It is a matter of the utmost importance to arrive at a system of education that will be what an American citizen should have. . . . Education is an appropriate remedy for very many of our evils, and the support of all good citizenship.
>
> Calvin Coolidge,
> *President* of the United States
> Nov. 13, 1923, White House

His statement shows that the leaders of the general public as well as of practical school work recognize weakness in American education plans.

The contribution which the federal government can make toward American education policy lies in the field of research on the fundamental problems which are important to the educational policy of the states. This research on fundamentals must be done on the scientific level, and the resulting generalizations must be verified by positive experiments so that the state leaders can rely on them. The state executives will utilize these verified generalizations, and thus national characteristics will be given to the school work in each state through state control.

It will be necessary to get from Congress either a department of education or a greatly enlarged bureau of education in order to make this federal research work possible. And it will also be necessary to arrange for the construction of a federal education building in which these research undertakings can be housed. The great education library which is already a part of the Bureau of Education is now housed in a series of office rooms in the Interior Building. These rooms will soon be needed for work assigned by Congress to the Department of the Interior, and the library is likely to be stored in the basement.

It will be well for educationists who are interested in giving American education national characteristics by evolving the "system of education that will be what an American citizen should have," as President Coolidge puts it, to begin the construction of plans for the utilization of a federal education building. What should be the research undertakings of the federal government in the field of education? I have drawn up with the help of others an outline of the research work needed by the states and appropriate to the federal government as a contribution to American education. A large six-story building is necessary as an equipment for this federal education work. The outline is as follows:

FEDERAL EDUCATION BUILDING

Ground Floor

Office for chief secretary and assistant secretary.
Education library, books and periodicals.
Education exhibits of teaching materials and methods.

Second Floor

Research work in education economics—expenses, taxes, state economic conditions, etc.
Research work on buildings—plans, heating, lighting, ventilation, playgrounds, fire protection, etc.
Research work on background sciences—sociology, anthropology, history, government, economics, manufacturing, engineering, the nature sciences, agriculture, etc.
Research work on the curriculum—civics, rural, vocational, household arts, sciences, literature, citizenship, health, character, etc., in schools, colleges and universities.

Third Floor

Research work in psychology—the application of pure psychology to education methods.
Research in education methods—tests, measurements, verification of the best teaching methods.
Cooperation with state education—bulletins, consultations, letters of advice, school law, etc.
Surveys—state, city and county applications of standards.
Cooperation with Congress, state legislatures, state departments of education.
Special researches for various states.

Fourth Floor

Research work in library management—public, university, college, school rural and special.
Research work on methods of library education—continuation school work, reading clubs, rural book education, mechanical knowledge, national problems, etc.
Research work on methods of library training—various types of book education work for the general public.
Research work in book selection—the useful books for various groups, reading lists, private library lists, etc.

Fifth Floor

Research on methods of education in the fine arts—painting, drawing, decorating, landscape gardening, designing, etc.
Exhibit of teaching materials in the fine arts.
Cooperation with the fine arts societies of the nation.
Researches on curriculum in the fine arts.

Sixth Floor

Auditorium for use of a federal council on education. To be used, also, for special experimental work in methods and materials: and also for consultations between state leaders of education and Congress, the President and his Cabinet, on national education problems.
Secretariat for the federal council on education.
Treasurer's office.

The research work in library education is included, because it is impossible to plan a complete education for all citizens without associating the library with schools and colleges and universities as a positive education institution.

The federal council on education would include the state superintendents and commissioners, educationists at large and representatives of the general public. This council would set the problems for the research work and receive reports thereon. The state superintendents and commissioners would return to their various states with this research knowledge and

the deliberations of the council as the background for their state leadership.

The above outline of undertakings to be accommodated in a federal education building is "according to my candle power." Advice for its evolvement will be received with gratitude.

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EDUCATIONAL RESEARCH AND STATISTICS

THE INTELLIGENCE OF CHINESE IN HAWAII

Measures of 513 Chinese children, grades 4 to 8, age 8 to 17, ought to give a fairly accurate index of their mental ability. Testing was done with the Pintner Non-Language Mental tests, the Thorndike-McCall Reading Scale Form 3, Thorndike Test of Word Knowledge Form A, Kelley-Trabue Completion Exercise Alpha, Charters' Diagnostic Language Test, Miscellaneous A, Form 1. These were turned into quotients called IQ, RQ, VQ, CQ and LQ, respectively. Age equivalents to a given score were obtained in the lower ages by the use of age standards. Above age fourteen various expedients were resorted to. The Thorndike-McCall and Kelley-Trabue manuals of directions already contain such norms extended into the higher ages. The only norms available for the Thorndike Test of Word Knowledge and the Charters' Test were grade norms. The average age for each grade was substituted for these grades and then was made the basis of the table giving equivalent ages for each score. This has an element of error inasmuch as age norms are computed on the other regression line, not the average age for a given score, but the average score for a given age. If the average age in grade VIII is 14.5 the average grade for age 14.5 is probably less. However, the error is not considerable. In the upper age levels the age equivalents had to be assumed arbitrarily. It is unfortunate that in the Pintner test his excellent scheme for obtaining an index could not be used. However, such an index could not be compared with quotients obtained in the other tests, and since there were no age percentiles given with any of the other tests there was no alternative to making out a table giving equivalent ages for scores on the Pintner work.

The averages are:

I. Q.	99.3
R. Q.	88.3
V. Q.	95.4
C. Q.	85.2
L. Q.	90.9

The total distributions are:

	I. Q.	R. Q.	V. Q.	C. Q.	L. Q.
180–184		1			
175–179					
170–174					1
165–169					
160–164					
155–159					
150–154	2				
145–149					1
140–144	5		5		2
135–139	2	1	1	2	4
130–134	8	1			4
125–129	8		7	4	9
120–124	19	5	13	4	5
115–119	42	7	12	9	20
110–114	43	23	37	4	15
105–109	55	15	46	13	36
100–104	57	33	66	20	42
95–99	60	58	70	44	66
90–94	65	77	68	74	49
85–89	48	75	58	63	66
80–84	25	74	66	81	48
75–79	21	60	35	73	49
70–74	21	44	19	67	33
65–69	12	24	7	38	34
60–64	10	11	2	15	14
55–59	7	3		1	11
50–54	2	1			4
45–49					
40–44	1				
N	513	513	513	513	513
M	99.3	88.3	95.4	85.2	90.9
σ	17.5	14.1	14.0	13.5	17.8
σ_m	.77	.62	.62	.60	.79

If I may hazard a guess there will come out in the next few years many studies on racial differences which may differ considerably in their conclusions. The I. Q. of the Chinese, for instance, may range from 85 to 99 according as one uses a verbal or non-verbal test. Indeed, it is difficult to imagine that different races could differ on the same test as much as this. It is conceivable that different tests will show differences in superiority between the races. We had better cast away our old blanket conception of racial superiorities and consider superiority rather in terms of separate functions or groups of functions.

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